

REMARKS

The Examiner rejects claims 56-89 and 104-112 under 35 U.S.C. §112, first paragraph, as failing to comply with the enablement requirement. The claims have been amended to overcome this rejection.

The Examiner rejects Claims 56, 58-60, 62-64, 67-76, 79-87, 104, 106-108, and 110-112 under 35 U.S.C. Section 102(b) as being anticipated by U.S. Patent 4,840,004 to Ting ("004 patent") and Claims 56, 61, 65-67, 69, 77-80, 88-89, and 104-112 under Section 102(b) as being anticipated by U.S. Patent 5,452,552 to Ting ("552 patent").

Applicants respectfully traverse the Examiner's rejections. The '004 and '552 patents fail to teach or suggest at least the following italicized features of the independent claims:

56. A wall system, comprising:
- at least a first perimeter framing member configured to hold at least a first wall panel;
  - at least a second perimeter framing member configured to hold at least a second wall panel, wherein the first and second perimeter framing members engage one another, wherein at least one of the first and second perimeter framing members defines a recess extending inwardly relative to exterior surfaces of the first and second wall panels, wherein at least one of the first and second perimeter framing members comprises a plurality of drainage holes, wherein the plurality of drainage holes are in fluid communication with a gutter located in an interior region behind the first and second panels and the first and second perimeter framing members, and wherein the gutter collects and provides to the drainage holes moisture located in the interior region for discharge into an exterior environment located exteriorly of the first and second perimeter framing members and first and second wall panels; and
  - a capillary break positioned on at least one of the first and second perimeter framing members, wherein the capillary break is spaced from the plurality of drainage holes and, along with surfaces of the recess, defines a circulating chamber, whereby entry of terrestrial fluids into at least one of the plurality of drainage holes is impeded, *wherein a free end of the capillary break is separated from one of the first and second perimeter framing members by a gap through which terrestrial fluids pass to enter the circulating chamber, wherein a lower surface of the circulating chamber is contoured to permit terrestrial fluids collected in the*

*circulating chamber to flow through the gap along the lower surface for discharge into the exterior environment, wherein the plurality of drainage holes are located above the free end of the capillary break, and wherein the capillary break extends downwardly from the at least one of the first and second perimeter framing members.*

67. A wall system, comprising:

at least a first perimeter framing member configured to hold at least a first wall panel;

at least a second perimeter framing member configured to hold at least a second wall panel, wherein the first and second perimeter framing members engage one another, wherein at least one of the first and second perimeter framing members defines a recess extending inwardly relative to exterior surfaces of the first and second wall panels, wherein at least one of the first and second perimeter framing members comprises a plurality of drainage holes, wherein the plurality of drainage holes are in fluid communication with an interior region and discharge moisture located in the interior region into an exterior environment located exteriorly of the first and second perimeter framing members and first and second wall panels; and

a capillary break positioned on at least one of the first and second perimeter framing members, wherein the capillary break is spaced from the plurality of drainage holes and located between exterior surfaces of the first and second panels and the drainage holes, whereby entry of terrestrial fluids into at least one of the plurality of drainage holes is impeded, *wherein the capillary break and walls of the recess define a circulating chamber located in the recess, wherein a free end of the capillary break is separated from one of the first and second perimeter framing members by a gap through which terrestrial fluids pass to enter the circulating chamber, wherein a lower surface of the circulating chamber is contoured to permit terrestrial fluids collected in the circulating chamber to flow along the lower surface and through the gap for discharge into the exterior environment, wherein the plurality of drainage holes are located above the free end of the capillary break, and wherein the capillary break extends downwardly from the at least one of the first and second perimeter framing members.*

79. A wall system, comprising:

at least a first perimeter framing member configured to hold opposing interior and exterior surfaces of at least a first wall panel;

at least a second perimeter framing member configured to hold opposing interior and exterior surfaces of at least a second wall panel, wherein the first and second perimeter framing members engage one another, wherein at least one of the first and second perimeter framing members defines a recess relative to exterior surfaces of the first and second wall panels, wherein at least one of the first and second perimeter framing members comprises a plurality of drainage holes, wherein the plurality of drainage holes are in fluid communication with a gutter located in an

interior region behind the first and second panels and the first and second perimeter framing members, and wherein the gutter collects and provides to the drainage holes moisture located in the interior region for discharge into an exterior environment located exteriorly of the first and second perimeter framing members and first and second wall panels; and

capillary break means positioned on at least one of the first and second perimeter framing members for redirecting flow of terrestrial fluids, wherein the capillary break is spaced from the plurality of drainage holes and, along with surfaces of the recess, defines a circulating chamber operable to impede entry of terrestrial fluids into the interior region, *wherein a free end of the capillary break means is separated from one of the first and second perimeter framing members by a gap through which terrestrial fluids pass to enter the circulating chamber and wherein a lower surface of the circulating chamber is contoured to permit terrestrial fluids collected in the circulating chamber to flow along the lower surface and through the gap for discharge into the exterior environment, wherein the plurality of drainage holes are located above the free end of the capillary break means, and wherein the capillary break means extends downwardly from the at least one of the first and second perimeter framing members.*

#### The '552 Patent

The exterior curtain wall system of the '552 patent comprises, with reference to Fig. 2a, first and second perimeter framing members 15 and 21, a rain screen member 24, drainage holes 38 and 68, downwardly extended leg 34, and an external gutter 26 confined by end dams 39. Most of the wind driven water will be repelled by the rain screen member 24 and spilled over water is guided into the external gutter 26 by the leg 34. Since both the external gutter 26 and the drainage tunnel 27 are pressure equalized, the drainage of water from the external gutter 26 into the drainage tunnel or "gutter" 27 through the drainage holes 38 is instantaneous and there will be no water buildup in the external gutter 26. (Col. 4, lines 33-41.) The "gutter" 27 does not collect and provide moisture to the drainage holes 38 for removal as required by Claims 17 and 28. Rather, the drainage holes 38 and external gutter 26 collect and provide moisture to the "gutter" 27 for removal. As can be seen from this discussion, the water moving beyond the rain screen member 24 and into the gutter 26 via

the gap between the free end of the member 24 and the opposing wall of the first perimeter framing member 21, unlike the invention claimed in Claims 14 and 28, is not able to pass back through the gap. It is blocked by the rain screen member 24. Rather, the water is collected adjacent to the drainage hole 38, passes through the hole 38 and into the drainage tunnel 27 and is carried out to the edge of the framing member and into the joint for disposal. The need to have a concealed drainage tunnel 27 to prevent water build up in the gutter 26 renders the system of the '552 significantly more complex and expensive to manufacture and install than the wall system of the present invention.

The Examiner asserts that either the rain screen member 24 or the leg 34 can be the capillary break. Because the leg 34 extends upwardly from the lower perimeter framing member rather than downwardly from the upper perimeter framing member, it cannot be the capillary break as set forth in the amended claims. Likewise, the drainage holes as claimed cannot be the drainage holes 38 as the drainage holes are not located above the free end of the “capillary break” (rain screen member 24).

The Examiner’s application of the pending claims to the ‘552 patent contradicts the language of the claims. For example, the Examiner refers to the separate groups of holes 68 and 38 as corresponding to the “plurality of holes” in Claims 56, 67, and 79. However, neither group of holes 68 or 38 satisfy the claimed description of each hole in the “plurality of holes”. As set forth in the claims, each hole must be in fluid communication with an internal gutter and spaced from and located above the free end of the capillary break. The holes 68 are neither in fluid communication with gutter 39 nor positioned in front of the capillary break 34, 24. The break 34, 24 is therefore unable to impede entry of terrestrial fluids into the holes 68. Moreover, the holes 38 are not spaced

from and located above the free end of the capillary break. Moreover, the capillary break does not impede terrestrial fluids from entering into the holes 38. Rather, collected terrestrial fluids 39 necessarily pass through the holes 38 for removal by the gutter 27. This arrangement further prevents the collected terrestrial fluids from flowing through the gap located between the free end of the capillary break and the lower surface of the recess. Rather, the gutter 27 directs the fluids around and beneath the gap. The '552 patent does not disclose a gutter "in an interior region behind the first and second panels" (which the Examiner analogizes to panels 74, 71). As seen from Fig. 2a, the gutter 27 is not behind the panels 74, 71.

#### The '004 Patent

The '004 patent is also directed to a wall panel attachment system. Figure 2 of the '004 patent illustrates attached horizontal perimeter framing members 18 and 19 which include a horizontal joint rain screen member 30 to separate the horizontal wall cavity into an outer horizontal cavity 31 (which equates to the inlet) and an inner horizontal cavity 32 (which equates to the circulating chamber). Water entering into the inner horizontal cavity 32 is "drained into the concealed horizontal cavity 34 through the drainage hole 35" (col. 4, lines 4-7) and from the concealed horizontal cavity 34 (which the Examiner characterizes as the "gutter") through the open end of the concealed horizontal cavity (col. 4, lines 7-8) and into the vertical wall joint 13 (shown in Figures 1 and 3). The "gutter" 34 does not collect and provide moisture to the drainage holes 35 for removal as required by Claims 17 and 28. Rather, the drainage holes 35 and inner horizontal cavity 32 collect and provide moisture to the "gutter" 34 for removal. Because the rain screen member 30 projects upwardly from the perimeter framing member 18 and not downwardly from the

*Application No. 09/886,297*

perimeter framing member 19, the water cannot flow out of the inner horizontal cavity, through the gap past the rain screen member 30; through the outer horizontal cavity 34 and into the exterior environment, as in the wall system of present invention. The need to have a concealed horizontal cavity 34 in the '004 patent system to prevent build up of water in the inner horizontal cavity 32 renders the wall system of the '004 patent significantly more complex and therefore more expensive to manufacture and install than the wall system of the present invention. Moreover, the '004 patent states that "[t]he design prevents the exterior water from reaching the wall joint seals eliminating water leakage *without using an internal gutter system*" as in the claimed invention. (Abstract, Emphasis supplied.)

As in the case of the '552 patent, the Examiner's application of the pending claims to the '004 patent contradicts the language of the claims. For example, the Examiner refers to the separate groups of holes 37 and 35 as corresponding to the "plurality of holes" in Claims 56, 6, and 79. However, neither group of holes 37 or 35 satisfy the claimed description of each hole in the "plurality of holes." As set forth in the claims, each hole must be in fluid communication with an internal gutter and spaced from and located above the free end of the capillary break. The holes 37 are not in fluid communication with the gutter 34. Moreover, the holes 35 are not spaced from and located above the free end of the capillary break. The capillary break also does not impede terrestrial fluids from entering into the holes 35. Rather, collected terrestrial fluids necessarily pass through the holes 35 for removal by the gutter 34. This arrangement further prevents the collected terrestrial fluids from flowing through the gap located between the free end of the capillary break and the lower surface of the recess. Rather, the gutter 34 directs the fluids around and beneath the gap.

For the foregoing reasons, Applicant believes that Claims 56-89 are allowable over the '004 and '552 patents.

The dependent claims provide additional bases for finding allowance.

By way of example, dependent Claims 58, 70 and 81 require the cross-sectional areas of flow past the capillary break and into the circulating chamber to be at specified levels to induce vortexing of the terrestrial fluid in the circulating chamber. (Specification at page 4, line 20, to page 6, line 4)

Dependent Claims 57, 59, 69, 71, 80, and 82 require specified minimum distances between the capillary break and the drainage holes. (Specification at page 13, line 13, to page 14, line 2) The '552 patent teaches that the drainage holes are in front of the rain screen member 24.

Dependent Claims 60, 62, 66, 72, 74, 78, 83, 85, and 89 require certain dimensional relationships between the capillary break and/or drainage holes. These features are not suggested nor disclosed by the '004 and '552 patents.

Dependent Claims 61, 73, and 84 require the rear surface of the capillary break to be concave to assist the formation of vortex flow conditions in the terrestrial fluid. (Specification at page 13, lines 4-6) These features are neither suggested nor disclosed by the '004 and '552 patents.

Dependent Claims 104, 108, and 112 require the capillary break and drainage holes to be located on a common side of the circulating chamber.

Dependent Claims 105 and 109 require the lower surface of the circulating chamber to be free of drainage holes.

*Application No. 09/886,297*

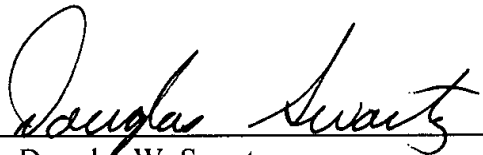
Dependent Claims 106 and 110 require at least most of the collected terrestrial fluids to pass along the lower surface, through the gap, and into the terrestrial environment.

Dependent Claims 107 and 111 require at least most of the collected terrestrial fluids to not pass through the gutter during the passing step.

Based upon the foregoing, Applicants believe that all pending claims are in condition for allowance and such disposition is respectfully requested. In the event that a telephone conversation would further prosecution and/or expedite allowance, the Examiner is invited to contact the undersigned.

Respectfully submitted,

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